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The political and institutional determinants of fiscal adjustments and expansions: Evidence for a large set of countries

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ABSTRACT

Using annual data for 60 countries over 1980–2014, we study the drivers of fiscal adjustments, expansions, and their duration. In contrast to most previous studies, the identification of these fiscal events relies on breaks in their data generating process. Our findings suggest that a few political and institutional variables play a role in determining the occurrence and the duration of fiscal adjustments and expansions. The results also highlight the importance of analyzing the likelihood of fiscal events together with their persistence. Factors that do not affect the occurrence of fiscal adjustments or expansions may influence their persistence once initiated.

1. Introduction

The analysis of political-economy factors influencing the occurrence of fiscal policy adjustments and expansions has received considerable attention in the literature since the publication of Alesina and Perotti (1995) seminal paper. Yet, empirical research to date has yielded very mixed evidence; there is clearly no consensus about the drivers of fiscal expansions and adjustments.

Most previous research has focused on fiscal adjustments reflecting that mounting fiscal deficits and debt were pushing economies towards unsustainable fiscal policy paths. Fiscal adjustments may be politically costly in the short run as they have noticeable short-term effects on economic activity and/or specific constituencies (Von Hagen, 2002). On the other hand, delaying fiscal adjustments can even be costlier (Alesina and Drazen, 1991). It is therefore important to identify which economic, political and institutional factors affect the occurrence and the duration of fiscal adjustments over time. However, the empirical literature has mainly studied 'successful' fiscal adjustments, where success is defined in terms of the permanency of the effects of adjustments on budget deficits and/or government debt. To the best of our knowledge, only two studies (Mierau et al., 2007; Lavigne, 2011) studied the drivers of fiscal adjustments independently of their success.

The determinants of fiscal expansions and their persistence have not received the same attention as those of fiscal adjustments. Instead, most of the empirical literature focused on the drivers of fiscal deficits rather than on the determinants of the occurrence and duration of fiscal expansions.

The most common approach to identify fiscal expansions and adjustments is to use ad hoc, one-size-fits-all criteria (e.g. a change in the cyclically adjusted budget balance above 1.5 percentage points). This approach has several limitations (International Monetary Fund, 2010; Wiese et al., 2018). Most importantly, using one-size-fits-all thresholds does not take into account that budget balance

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volatility differs significantly across countries (Wiese et al., 2018). As a consequence, this one-size-fits-all method may identify fiscal adjustments or expansions when in fact fiscal policy did not change. An additional problem appears when these one-size-fits-all thresholds are combined with ad hoc lengths of time in order to classify fiscal adjustments (as successful or unsuccessful, large or small, and gradual or fast). This has been common practice in the empirical literature and we believe it blurs the occurrence of fiscal adjustments and their persistence over time, making a proper analysis of the drivers of fiscal adjustments and their duration problematic.

Our paper contributes to the literature in a number of ways. First, we follow a similar method as Wiese et al. (2018) to identify fiscal adjustments and expansions in 60 countries over the period 1980–2014. This approach relies on changes in the data generating process of fiscal variables to identify fiscal expansions and adjustments. Second, we examine a large set of political-economy determinants of fiscal adjustments and expansions. As explained above, the drivers of fiscal expansions have received scant attention so far.[1] Third, we also consider the impact of financial crises on the probability of fiscal adjustments and expansions. So far, the literature mainly studied the impact of financial crises on fiscal policy outcomes (see, for instance, Reinhart and Rogoff, 2009; Laeven and Valencia, 2018). Finally, we also analyze the factors influencing the duration of fiscal adjustments and expansions. As we will show, factors that do not affect the occurrence of fiscal adjustments or expansions may influence their persistence once initiated.

Our study takes Mierau et al. (2007) as a starting point as these authors were the first to systematically examine the drivers of fiscal adjustments for a sample of OECD countries, considering a large set of potential political and economic determinants. Our set of explanatory variables is therefore very similar to the determinants considered by Mierau et al. (2007). However, our study differs along four dimensions. First, our analysis is not confined to OECD countries only, but includes all countries for which sufficient data is available. Second, we not only consider the occurrence of fiscal adjustments, but also examine the drivers of fiscal expansions. Furthermore, we also analyze the drivers of the duration of fiscal adjustments and expansions. Finally, instead of relying on "one-size-fits-all criteria" to identify fiscal expansions and adjustments, we follow Wiese et al. (2018) and use the Bai-Perron methodology.

We use a conditional logit model to estimate the drivers of fiscal adjustments and fiscal expansions, and survival analysis to study the determinants of their duration. Our results suggest that economic factors in general are not the only drivers of fiscal adjustments and expansions and their persistence. Some political and institutional variables do have a significant effect. This is particularly true for fiscal expansions, which seem to be driven mainly by political and institutional determinants. In contrast to previous studies, we find that government ideology plays an important role due to its association with the persistence of both fiscal adjustments and expansions. Last, but not least, our findings highlight the importance of jointly analyzing the likelihood of fiscal adjustments and expansions and their survival over time. Our results suggest that the occurrence of fiscal adjustments/expansions are not driven by the same factors that determine their duration.

The paper is organized as follows. Section 2 offers a brief overview of the literature on the drivers of fiscal adjustments and expansions. The hypotheses to be tested are also formulated here. Section 3 discusses our data and estimation framework, after which section 4 presents the estimation results. This section also discusses the outcomes of several robustness checks. Section 5 concludes.

2. Literature review and hypotheses

2.1. Determinants of fiscal adjustments and expansions

The conclusions of studies on the determinants of fiscal adjustments (irrespective of their success) are rather diverse. Economic factors, like economic growth and unemployment, and the fiscal position of the government (as reflected in the budget balance and the debt-to-GDP ratio) clearly matter. However, studies report very mixed evidence on the importance of political-economy factors.

Alesina and Perotti (1995) find that governments are more (less) likely to initiate a large fiscal expansion (adjustment) in recession years than in non-recession years. Coalition governments have a slightly higher tendency to engage in very expansionary fiscal policies, while minority governments are more likely to introduce fiscal adjustments. Alesina and Perotti (1995) also report that the probability of observing large fiscal expansions is lower with right-wing governments, while left-wing governments are more likely to carry out very tight fiscal policies. Elections do not appear as an important factor. The results of Von Hagen and Strauch (2001) suggest that fiscal consolidations are more likely in periods when the domestic economy is doing well and also in the presence of high debt-to-GDP ratios. Alesina et al. (2006) find that fiscal adjustments are more likely to take place in time of crisis, when the party in office has a large majority, and when the executive branch faces fewer constraints. The results of Mierau et al. (2007) indicate that a weak fiscal situation increases the likelihood of fiscal adjustments and that economic growth is not a strong determinant of fiscal effort. Upcoming elections negatively influence the occurrence of rapid fiscal adjustments. If a country has embarked on a broad policy reform, this makes the occurrence of a gradual (but not a rapid) fiscal adjustment more likely. Finally, Lavigne (2011) reports that in advanced economies institutional quality (rule of law) makes implementing large – and more persistent – fiscal adjustments more probable. In these countries, the need for adjustment appears to be determined by low growth and inflation. For developing economies, Lavigne (2011) finds that low institutional quality is usually associated with large and more persistent fiscal adjustments. In these countries, the occurrence of large adjustments is also driven by inflation.

[1] There is of course an extensive literature on political budget cycles (PBC); see, for instance, Castro and Martins (2018) and de Haan and Klomp (2013) for surveys. However, the underlying research question of this line of research is different, namely what drives fiscal policy outcomes (notably the budget balance) versus what drives fiscal expansions/adjustments. So, in the PBC literature the left-hand side variable is a fiscal policy outcome variable (mostly some proxy for the budget balance), while in the fiscal expansions/adjustment literature the left-hand side variable is the probability of a fiscal expansion/adjustment.

Table 1
Potential drivers of the likelihood of fiscal events and expected impact.

	Potential drivers	Hypothesized effect on the likelihood of:	
		Fiscal adjustment	Fiscal expansion
Economic	Debt-to-GDP ratio	+	–
	(Lagged) Budget balance	+	–
	Unemployment	-	+
	Inflation	-	–
	GDP growth	+	–
	Financial crisis	*	+
Institutional quality	Voice and accountability	+	–
	Rule of law	+	–
Political-economy	Size fragmentation government	-	+
	Political fragmentation government	-	+
	Strength of government	+	–
	Government ideology	-	+
	Upcoming elections	-	+
	Broad policy reform	+	*
	Cabinet change/government crisis	-	+

Notes: The '+' sign represents an expected positive effect, '−' stands for an expected negative effect, and '*' means that we do not have a clear expectation in view of opposing results reported in the literature.

As to fiscal expansions, most of the empirical literature has focused on the political and economic determinants of the occurrence of budget deficits rather than fiscal expansions as such (e.g. Roubini and Sachs, 1989; de Haan and Sturm, 1994; Kontopoulos; Perotti, 1999; Volkerink and de Haan, 2001). Eslava (2011) provides a survey of this literature. The studies mentioned suggest that political-economy factors are important drivers of budget deficits, but they identify different determinants. For instance, de Haan and Sturm (1994) find that the growth of government debt is positively related to the frequency of government changes. Roubini and Sachs (1989) report that weak governments, i.e. the presence of many political parties in a ruling coalition, have higher deficits. Consistent with this view, Kontopoulos and Perotti (1999) and Volkerink and de Haan (2001) find evidence that more size-fragmented governments (i.e. governments consisting of many parties or with a lot of spending ministers) have larger deficits. Volkerink and de Haan (2001) also report that strong support for the government in parliament is associated with lower deficits while political fragmentation (i.e. large ideological differences among coalition parties) is associated with higher deficits.

Based on the literature reviewed above, Table 1 presents a summary of the potential drivers of fiscal adjustments and expansions and their expected signs. Online Appendix 1 offers a more extensive motivation of the hypotheses.

2.2. *Determinants of the duration of fiscal adjustments and expansions*

There is only scant empirical research on the determinants of the duration of fiscal events which is biased towards the study of the persistence of fiscal adjustments. Some studies consider political-economy variables.

Von Hagen et al. (2002) find that high initial debt levels and a weak cyclical position of the domestic economy contribute, weakly, to the likelihood of sustaining consolidations. Gupta et al. (2005) report that higher indebtedness lowers the risk of ending an adjustment. In turn, institutional quality (as measured by corruption) increases the risk of ending a fiscal adjustment. Finally, these authors report that crises do not have any influence on the duration of fiscal adjustments. The results of Illera and Mulas-Granados (2008) indicate that the larger the size of the cabinet, the shorter the length of the consolidation, while elections tend to reduce the duration as well. Finally, these authors also find that a higher debt ratio is associated with a longer duration of consolidations. Agnello et al. (2013) conclude that higher budget deficits increase the persistence of fiscal adjustments and that higher debt levels have the opposite effect. Good economic conditions contribute to shorter consolidations, but also higher inflation rates seem to have the same effect. Finally, they also highlight that financial crises may end the adjustment process sooner. Foremny et al. (2017) report that both a higher lagged balance and a higher real GDP growth increase the duration of fiscal adjustments. They also find that right-wing government are associated with longer consolidations. Finally, de Haan and Parlevliet (2018) highlight that structural reforms in labor and product markets may improve the resilience of the economy to adverse shocks hence reducing the size and duration of fiscal expansions.

Table 2 shows the expected sign on the coefficients of the variables that may affect the survival of fiscal adjustments and expansions over time. Some conclusions of Lavigne (2011), who studies the determinants of adjustments that last for 5 or more years, are taken into consideration in this table.[2] It is clear from this table that in many cases the influence of political and economic variables on the duration of both fiscal events is not clear or unknown.

[2] Lavigne (2011) finds that the duration of fiscal adjustments is shorter the higher economic growth and the higher the level of inflation. Likewise, the stronger the rule of law, the longer is the duration of the adjustments. Note, however, that Lavigne reports opposite results for inflation and the rule of law for developing countries.

Table 2
Potential drivers of the duration of fiscal events and expected impact.

	Potential drivers	Hypothesized effect on the duration of:	
		Fiscal adjustment	Fiscal expansion
Economic	Debt-to-GDP ratio	+	–
	(Lagged) Budget balance	-	*
	Unemployment	-	+
	Inflation	+	–
	GDP growth	-	–
	Financial crisis	-	+
Institutional quality	Voice and accountability	*	*
	Rule of law	+	*
Political-economy	Size fragmentation government	*	+
	Political fragmentation government	*	+
	Strength of government	+	*
	Government ideology	-	+
	Upcoming elections	-	+
	Broad policy reform	*	–
	Cabinet change/government crisis	-	*

Notes: The '+' sign represents an expected positive effect, '−' stands for an expected negative effect, and '*' means that we do not have a clear expectation in view of opposing results reported in the literature.

3. Empirical analysis

3.1. Data

3.1.1. Fiscal adjustments and expansions

Our dataset of fiscal adjustments and expansions is based on the yearly figures of the cyclically adjusted balance (CAB) from the International Monetary Fund World Economic Outlook database (2017).[3] We follow the approach for determining the presence of fiscal adjustments introduced by Wiese et al. (2018) and extend it to fiscal expansions. In general, a fiscal event is identified by changes in the Data Generating Process (DGP) of the CAB. These breaks are estimated using an algorithm developed by Bai and Perron (1998, 2000, 2003), referred to as BP from here onwards.[4]

The BP algorithm identifies the presence of a fiscal event, but it does not automatically find its starting point, nor does it classify the event as a fiscal adjustment or expansion. Therefore, we proceed as follows. The nature of the break is simply determined by comparing the average level of the budget balance directly before and after the break found. An increase indicates the presence of a fiscal adjustment and a decrease indicates a fiscal expansion. The beginning date of the fiscal adjustment/expansion is then found at the year around the break at which the positive/negative change in the base variable started. In a few cases, the fiscal situation of a country may have been an improvement/deterioration for a long time, which will lead to the beginning of the fiscal adjustment/expansion to be located further away from the BP break.

Using this approach, and considering the period 1980–2014, we are able to detect 122 structural breaks in the CAB series (BP breakpoints) for a total of 60 countries. Table 3 shows that, out of the total, 62 of these events correspond to fiscal adjustments and 60 to fiscal expansions (Table A3.1 in the online appendix presents a detailed list of the BP breakpoints and fiscal events per country.).

Dummy variables are created to reflect the presence of either a fiscal adjustment or an expansion. Another important variable is the duration of the fiscal adjustments and expansions, which is simply the number of years they last. In our sample, duration is generally larger for fiscal adjustments than for expansions. The variable called average size reflects the accumulated change in the CAB figures either during the first year of the event and for its total length.

[3] Using the non-cyclically adjusted budget balance for this purpose would for sure yield biased results, because the actual budget balance is affected by the state of the business cycle. That is why we follow previous studies in this line of research and use the cyclically adjusted budget balance.

[4] A detailed description of the methodology followed to identify both fiscal adjustments and expansions is available in the online Appendix 2, while Appendix 3 offers more details regarding the fiscal adjustments and expansions in our sample. We rely on the recommendations of Bai and Perron (2000, 2003) who present an extensive simulation analysis pertaining to the size and power of the tests, the accuracy of the asymptotic approximations for the confidence intervals and the relative merits of different methods to estimate the number of breaks. For example, in order to avoid having to arbitrarily pre-specify a particular number of breaks to make inference, we follow BP's recommendations and use the double maximum tests, the sequential procedure, and if necessary also the Bayesian Information Criteria (BIC) to determine the final number of breaks. In essence, what these tests do is to try out several different specifications, given some upper bound m, and then select the most adequate among these. We used an upper bound of 5 as recommended by Bai and Perron (2003). Likewise, for the trimming parameter h which specifies a minimum number of observations that have to occur between consecutive breaks, we decided using a trimming parameter of 15% as recommended by Bai and Perron (2003) for several applications.

Table 3
Descriptive statistics of fiscal adjustments and expansions.

	Countries	Events	Average duration (years)	Average size (% of GDP)	
				First year	Total
Adjustments	45	62	3.63	2.12	5.69
Developed	*24*	*33*	*4.09*	*1.79*	*5.91*
Expansions	48	60	2.97	−1.83	−5.45
Developed	*24*	*24*	*3.45*	*−1.22*	*−5.56*
Total	**60**	**122**	**3.30**	**–**	**–**

Notes: Fiscal adjustments and expansions obtained using multiple breaks technique (Bai and Perron, 1998) from an unbalanced panel with a minimum of 14 observations per country. Developed indicates the numbers for advanced economies. Table A5.2 in the online Appendix 5 shows the classification of the countries in our sample.

Table 4
Descriptive statistics of the duration/survival of fiscal events.

	Adjustments	Expansions
Cases	62	60
Time at risk (years)	225	178
Failure rate	0.275	0.337
Mean survival (years)	3.63	2.96
Min survival (years)	1	1
Max survival (years)	9	7

Notes: Fiscal adjustments and expansions obtained using multiple breaks technique (Bai and Perron, 1998).

Table 4 presents more details regarding the survival analysis of these events. For the analysis of the duration of either adjustments or expansions, we follow the literature and create a variable called failure that assumes a value of one if the event has failed and zero otherwise.

3.1.2. Other variables

The *economic variables* used as controls—i.e. the lagged cyclically adjusted balance, real annual GDP growth, the debt-to-GDP ratio, unemployment, and inflation—are self-explanatory; data come from the IMF and the World Bank (see Table A5.1 in the online appendix for details). The occurrence of a financial crisis is measured by a dummy variable which is one if a crisis has occurred in that year according to Reinhart and Rogoff (2009) and zero otherwise. As debt crises may be different than other types of crisis, we also use a debt crisis dummy which is constructed in the same way as the financial crisis dummy.

We capture *institutional quality* by indicators of 'voice and accountability' and the 'rule of law', representing the accountability and responsiveness of a government to its citizens and a nation's economic governance, respectively. Both institutional variables come from the World Bank's Worldwide Governance Indicators (see Kaufmann et al., 2010), but they are included as backward-looking three-year averages, where the current year is not included, in order to account for possible problems of endogeneity. The first variable measures what Acemoglu and Robinson (2013, p. 36) have in mind when they explain why the quality of political institutions matters in explaining the different economic fates of Mexico and the US: "Unlike in Mexico, in the United States the citizens could keep politicians in check and get rid of ones who would use their offices to enrich themselves or create monopolies for their cronies." In studies on economic growth, an index of the rule of law is often interpreted as an indicator of economic governance (see. e.g. Rigobon and Rodrik, 2005). The World Bank provides data on these two variables only from 2002 onwards.

The *political-economy variables* considered (see Table 1) are mostly constructed using information from the Database of Political Institutions (Beck et al., 2001). Following Mierau et al. (2007), we consider the following political-economy variables in this analysis:

- The effective number of political parties in the government is used to measure size fragmentation of the government.
- Political fragmentation of the government is measured using an indicator similar to the one proposed by Volkerink and de Haan (2001):

$$\sum_{j}^{n}\left(\left(\frac{Seats_j}{Total}\right) * \left(Complexion_j - IPG\right)^2\right) \quad (1)$$

where $Seats_j$ refers to the number of seats of party j in parliament and *Total* to the total number of seats in parliament. $Complexion_j$ refers to the ideological complexion of party j, and is measured on a 1 (right-wing) to 3 (left-wing) scale.[5] Finally, the variable *IPG* reflects the ideological position of the government, which is discussed below.

- The strength of the government is approximated by the number of excess seats, defined by the number of seats of the ruling coalition divided by the total number of seats in parliament. It is assumed that the more seats the coalition has in parliament, the stronger it will be (cf. Volkerink and de Haan, 2001).
- The ideological position of the government (*IPG*) is determined using a measure proposed by Volkerink and de Haan (2001):

$$\sum_{j}^{n}\left(\left(\frac{Seats_j}{Total}\right) * Complexion_j\right) \quad (2)$$

- Broad policy reform is measured by using the first difference of the economic freedom index of the Frazer Institute (2015). A change in economic freedom is associated with the type of reforms proposed by the IMF and the World Bank (de Haan et al., 2006).
- Upcoming elections measured by a dummy variable, indicating a 1 when an election is held the upcoming year. This variable is based on the politi15 variable from the cross-national time-series data archive (Wilson, 2015).
- The degree of political instability is approximated by two dummy variables: the first indicating a change of cabinet, the second indicating the occurrence of a government crisis. Both dummy variables are 1 when the event occurs and zero otherwise. A cabinet change is defined as a change of president or prime minister, or as a replacement of at least 50% of the ministers. A government crisis is defined as a situation which could lead to the downfall of the ruling government. Both variables come from the cross-national time-series data archive (Wilson, 2015).

The number of observations is restricted due to the limited availability of fiscal data, especially of the cyclically adjusted balance, which is needed to construct our dependent variables. The descriptive statistics of all variables are shown in Table A5.1 in the online appendix, together with their sources.

3.2. Estimation framework

3.2.1. Determinants of fiscal events (conditional logit)

We start by regressing the dummy variable representing the occurrence of a fiscal adjustment or expansion on a set of traditional control variables: the fiscal position of the government (lagged cyclically adjusted balance and the debt-to-GDP ratio) and economic circumstances (inflation, unemployment and real GDP growth). Since the dependent variable is binary, normally logit fixed effects would be used to estimate the model.[6] However, the number of parameters in the model would be very high due to the large number of countries, captured by the fixed effects of the model. This problem, known as the incidental parameters problem, prevents consistent estimation. Following Mierau et al. (2007), we therefore use conditional logit estimation, where the likelihood function is conditioned on a minimum sufficient statistic, which is in our case the number of fiscal adjustments (expansions) per country. A second problem, the temporal dependence of the dependent variable, is caused by its binary nature. This will render the results inconsistent. Beck et al. (1998) propose a solution to this problem by including a set of dummy variables, marking the set of years since the occurrence of a fiscal adjustment (expansion). However, this approach would imply the loss of too many degrees of freedom and will lead to inconsistency. Therefore, we follow another suggestion of Beck et al. (1998), namely adding several variables to the base model to control for temporal dependence. The dummy variables are replaced by three natural cubic smoothing splines, based on the occurrence of adjustments (expansions), and a variable reflecting the number of past adjustments (expansions). The latter variable is suggested as solution to the

[5] In view of the large sample of countries, more fine-grained measures are not available. We therefore follow most previous studies examining the impact of ideology using large samples of countries and use the World Bank Political Database for our purposes.

[6] The fixed effects model would function as follows (adopted from HYPERLINK \l "" \o "" \h Verbeek, 2015). Assuming the relation $y_{it}^{*} = x_{it}^{'}\beta + \alpha_i + \varepsilon_{it}$, where y_{it}^{*} is unobserved and represents the inclination to adjust. This inclination depends, amongst others, on unobserved country characteristics α_i. As such, we only observe $y_{it} = 1$ *if* $y_{it}^{*} > 0$ and otherwise $y_{it} = 0$. This gives the probability to observe a particular fiscal event (Mierau et al., 2007): $P(y_{it} = 1) = P(y_{it}^{*} > 0)P(= x_{it}^{'}\beta + \alpha_i + \varepsilon_{it} > 0) = P(-\varepsilon_{it} \leq x_{it}^{'}\beta + \alpha_i) = F(x_{it}^{'}\beta + \alpha_i)$.

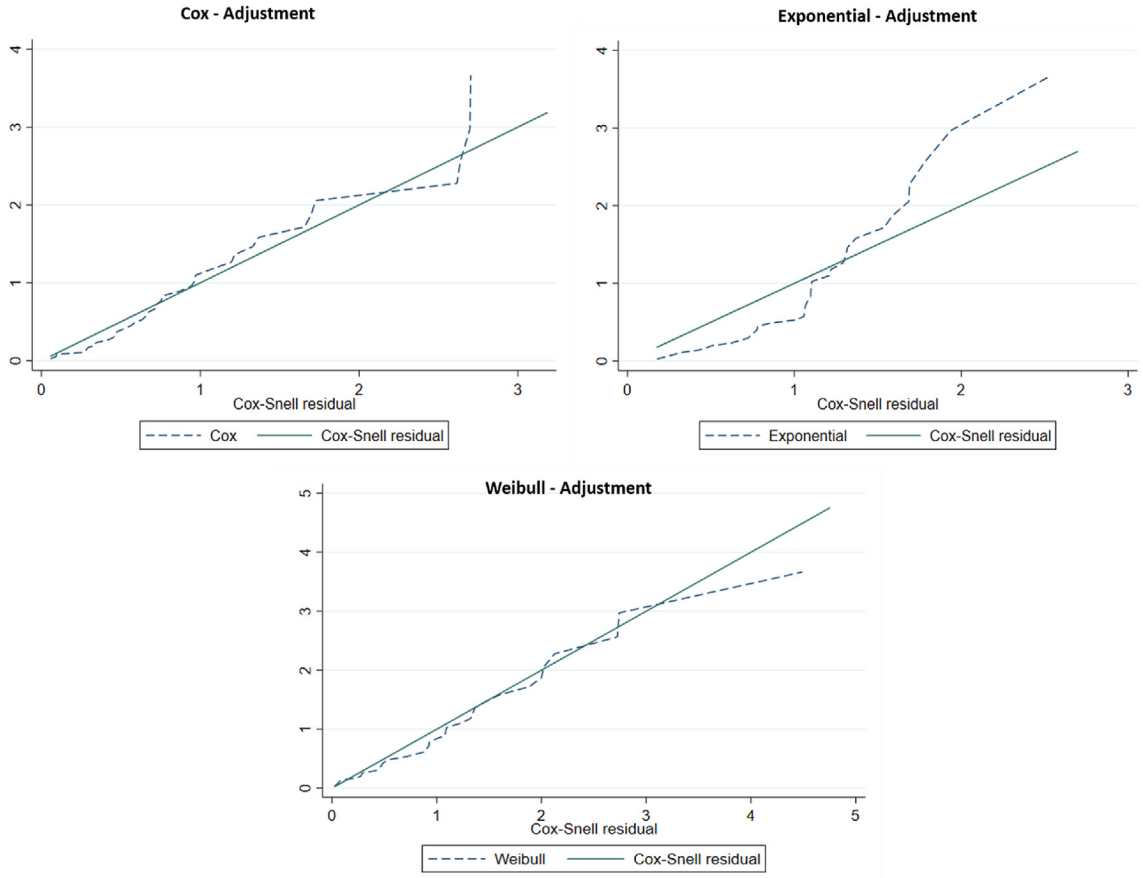

Fig. 1. Cox–Snell residuals.

presumed dependence of the fiscal events (cf. Mierau et al., 2007). As such, our model includes the proposed variables by Beck et al. (1998) and the variable reflecting the number of past specific fiscal events:

$$FE_{it} = \beta_0 + \beta_1 PB_{it-1} + \beta_3 \left(\frac{debt}{GDP}\right)_{it} + \beta_4 IN_{it} + \beta_5 UN_{it} + \beta_6 GDPgrowth_{it} + \beta_7 NPE_{it} + \beta_8 TSLE_{it} + \beta_9 spline1 + \beta_{10} spline2 + \beta_{11} spline3 + \varepsilon_{it} \quad (3)$$

where FE is a binary variable that represents the occurrence of a fiscal adjustment/expansion, PB is the cyclically adjusted balance, IN is inflation, and UN is unemployment. Also, NPE represents the number of prior events (either adjustments or expansions) and TSLE reflects the time (years) since the last fiscal event. This is what we call the baseline model. Then, following the approach of Mierau et al. (2007), the financial crises, institutional and political economy variables are regressed one by one (along with the control variables) on the binary dependent variables constructed.

3.2.2. Determinants of the duration of fiscal events (survival analysis)

Typically, duration analysis involves two steps, first a non-parametric analysis in which the dependence of duration of fiscal adjustments and expansions on time is analyzed. And secondly, a parametric analysis in which other factors, apart from time dependency, are included to account for the observed variation in the duration of the fiscal events. The non-parametric analysis tries to disentangle the (positive or negative) dependence of fiscal events on their accumulated duration. This is typically done by estimating two functions. First, the survivor function, which is defined as:

Table 5
Determinants of the probability and duration of fiscal adjustments: Summary.

	Probability of adjustment [a]	Duration of adjustment [b]
Debt-to-GDP ratio	+ +	
(Lagged) Budget balance	− − −	− − −
Unemployment		+ + +
Inflation		
GDP growth		
NPA	− −	+ + +
TSLA		− − −
Financial crisis		
Debt crisis		
Voice and accountability		+ +
Rule of law	− −	
Size fragmentation government		
Political fragmentation government		
Strength of government		
Government ideology		+ +
Upcoming elections		+ +
Broad policy reform		
Cabinet change		
Government crisis		

Notes: The number of plusses or minuses represents the strength of the statistical test: three for the 1% significance level, and two for the 5% significance level. NPA=Number of previous adjustments. TSLA = Time since last adjustment. This table excludes results obtained with confidence levels below 95%. The X marks the lack of results due to problems with that particular estimation.
[a] Conditional logit model, binary dependent variable.
[b] Hazard model estimation, dependent variable is the hazard rate of the fiscal adjustment.

$$S(t) = Pr(T \geq t) = 1 - F(t) \tag{4}$$

and gives the probability that the duration of the fiscal adjustment (T), for example, is greater than or equal to t. And then the hazard function, which is defined as:

$$h(t) = Pr(T = t \,/\, T \geq t) \tag{5}$$

and gives, for each duration, the probability of ending a consolidation or expansion episode conditioned on the duration of the fiscal event through that moment. Nevertheless, non-parametric analysis has limitations; it does not allow to analyze other factor that may explain the probability of ending fiscal adjustments and expansions. To address this issue, we perform a parametric analysis of duration. This is done by estimating a Model of Proportional Hazard (PH), which is the duration model that is usually used to characterize the hazard function, and it assumes that the hazard function can be split as follows:

$$h(t, X) = h_0(t)^* g(X) \tag{6}$$

where $h_0(t)$ is the baseline hazard function that captures the dependency of data to duration, and $g(X)$ is a function of individual variables. This function of explanatory variables is a negative function usually defined as $g(X) = exp(X'\beta)$. Note that in this proportional specification, regressors intervene re-escalating the conditional probability of ending a period of fiscal adjustment or expansion, not its own duration. This model can be estimated initially without imposing any specific functional form on the baseline hazard function, following the Cox (1972) model:

$$h(t, X) = h_0(t)^* exp(X'\beta) \tag{7}$$

An alternative is to impose a specific parametric form on the function $h_0(t)$. The models most commonly used are the Weibull Model and the Exponential Model. In the first one, $h_0(t) = \rho t^{\rho-1}$, where ρ is a parameter that has to be estimated. When $\rho = 1$, the Weibull

Table 6
Determinants of the probability and duration of fiscal expansions: Summary.

	Probability of expansion [a]	Duration of expansion [b]
Debt-to-GDP ratio		
(Lagged) Budget balance	+ + +	+ + +
Unemployment		
Inflation		+ +
GDP growth		
NPE		+ + +
TSLE		− − −
Financial crisis	X	+ +
Debt crisis	X	− −
Voice and accountability	− − −	
Rule of law		
Size fragmentation government		
Political fragmentation government		
Strength of government	− − −	+ +
Government ideology		+ + +
Upcoming elections		
Broad policy reform	+ + +	− − −
Cabinet change		
Government crisis		

Notes: The number of plusses or minuses represents the strength of the statistical test: three for the 1% significance level, and two for the 5% significance level. NPE=Number of previous expansions. TSLE = Time since last expansion. This table excludes results obtained with confidence levels below 95%. The X marks the lack of results due to problems with that particular estimation.
[a] Conditional logit model, binary dependent variable.
[b] Hazard model estimation, dependent variable is the hazard rate of the fiscal expansion.

Model is equal to the Exponential Model, where there exists no dependency on duration. On the other hand, when the parameter $\rho > 1$, there exists a positive dependency on duration, and a negative dependency when $\rho < 1$. Therefore, by estimating ρ, it is possible to test the hypothesis of positive duration dependency of fiscal consolidations (also called adjustment fatigue). Given that we have several possible parametric models, we test the power of each model, through graphic analysis of the Cox and Snell (1968) residuals. These residuals are defined as follows:

$$\hat{e} = -\log\ S(t/x). \tag{8}$$

If the model fits the data, then the plot of the cumulative hazard versus $\hat{e}$ should be a straight line with slope equal to unity and beginning at the origin. As can be observed in Fig. 1, the Weibull plot clearly satisfies the exponential requirement for most of the time, except for larger residuals.[7] We therefore use the Weibull model.

4. Results and discussion

Table 5 (adjustments) and Table 6 (expansions) present a summary of the results for both the determinants of the occurrence of fiscal events and their duration. The full estimation results are presented in the Appendix (Table A.1, Table A.2, Table A.3, and Table A.4) .[8] In specific cases, results are not feasible due to methodological difficulties such as lack of information or non-converging errors in the estimations. This holds in particular for some estimations including financial crises.

4.1. Fiscal adjustments

We find significant results for several economic control variables which are consistent with our expectations. A higher debt-to-GDP-ratio significantly increases the probability of a fiscal adjustment. However, government indebtedness is not associated with the length

[7] We only show the result for the case of fiscal adjustments. Results based on fiscal expansions provide the same conclusions (results available on request).
[8] In the online Appendix 6 we also present the results if we include several proxies for the presence of fiscal rules using the IMF database of fiscal rules (Schaechter et al., 2012) as used by Gootjes et al. (2020). It turns out that fiscal rules do neither affect the likelihood that a fiscal adjustment or expansion occurs nor their duration.

Table 7
Logit model: dependent variable based on one-size-fits-all criteria.

	Von Hagen	Lavigne
(Lagged) Budget balance	−0.748***[b]	−0.550***[b]
Debt crisis	−8.868***	
Political fragmentation government		2.040*
Strength of government		−7.811**
Government Ideology [a]		−0.901**

Notes: Binary dependent variable based on alternative definitions: Von Hagen and Strauch (2001) and Lavigne (2011). Numbers in this table represent the log-odds. Results based on countries with more than 14 observations. ***p<0.01, **p<0.05, *p<0.1.

[a] Government ideology is contemporaneously not statistically significant, but its lagged version is.

[b] Values from the baseline model.

of fiscal adjustments. There is also a negative impact of the lagged cyclically adjusted balance on the probability of a fiscal adjustment and its duration. Unemployment does not influence the probability of an adjustment, but it is associated with longer fiscal adjustments. Our results do not provide evidence that the probability of a fiscal adjustment is related to the occurrence of a financial or a debt crisis.

The results regarding the institutional variables indicate that higher levels of voice and accountability are not related to the occurrence of fiscal consolidations. However, countries with higher levels of voice and accountability do have longer fiscal adjustments. The rule of law is inversely related with the probability that a fiscal adjustment occurs. Political fractionalization does neither appear related to the occurrence of fiscal consolidations nor with its duration. Upcoming elections are not related with the chance that a fiscal adjustment takes place, but are positively associated with the persistence of fiscal adjustments. Finally, our results suggest that the more leftist the government is (i.e. the variable has a high value), the lower the chance of fiscal adjustments ending. This could be supporting the presence of a 'Nixon-goes-to-China' effect (Cukierman and Tomassi, 1998), in which the credibility of such costly measures is increased by the fact that they are taken by a political party which traditionally has a contrary position.

4.2. Fiscal expansions

Economic control variables, with the exception of the lagged balance, are not related to fiscal expansions or their duration. A strong fiscal position of the government makes an expansion more likely and makes it long-lasting. Governments with solid fiscal records, and possibly low levels of debt, should be able to sustain periods of fiscal expansions over time.

Political and institutional factors explain most of the findings related to fiscal expansions. The variable 'voice and accountability' has a strong negative relationship with the probability of fiscal expansions. When institutions are able to transform voters' preferences for lower taxes into fiscal prudence, such a result should not be surprising. In turn, government's majority is inversely related with the probability of fiscal expansions. But the duration of a fiscal expansion is longer under governments having large majorities in parliament. Interestingly, government ideology does not affect the probability of fiscal expansions but is associated positively with its duration. The more leftist the government, the longer the duration of their fiscal expansions are. Finally, broad policy reform is positively associated with the occurrence of fiscal expansions. As pointed out by de Haan and Parlevliet (2018), to gain acceptance of reforms potential 'losers of reform' may need to be compensated. Nevertheless, the fiscal expansions associated to broad policy reforms tend to be shorter.

4.3. Results using one-size-fits all criteria to determine fiscal adjustments

Although we forcefully argue against using one-size fits all criteria to identify fiscal adjustments and expansions, we re-estimated our model for fiscal adjustments using such criteria. We consider fiscal adjustments that were obtained following one-size-fits-all criteria proposed by Von Hagen and Strauch (2001) and Lavigne (2011). Von Hagen and Strauch (2001) consider that a fiscal adjustment takes place if the cyclically adjusted government budget balance (as % of GDP) increases at least 1.25 percentage-point in two consecutive years, or if it increases at least 1.5 percentage-point in one year and is positive in the other. Lavigne (2011) defines fiscal adjustments as a continuous positive change in the cyclically adjusted primary balance of at least 1.5% of GDP over 5 years. Clearly, the time dimension is more important in the latter definition. Using these new definitions, we identify 60 fiscal adjustments *à la* Von Hagen and 24 fiscal adjustments *à la* Lavigne. Table 7 presents a summary of the outcomes for the model for the probability of a fiscal adjustment, showing only coefficients that are statistically significantly different from zero.[9] Political and institutional factors do not explain the probability

[9] Detailed results are available on request.

of a fiscal adjustment under the definition of von Hagen and Strauch. On the other hand, political-economy variables do seem to play a more relevant role when using the definition of Lavigne. The use of a different method to identify fiscal adjustment thus explains why our results for fiscal adjustments deviate from the findings reported by Lavigne (2011).

The fact that the results in Table 7 are different from those in Table 5 does not come as a surprise. As extensively discussed by Wiese et al. (2018), there are serious problems using a one-size fits all criterion to identify fiscal adjustments. Most importantly, countries having a more volatile budget process, by definition, will end up with many fiscal expansions/adjustments if the identification of these events is based on, for example, the change in the cyclically adjusted budget balance. As Wiese et al. (2018) show for OECD countries, the BP approach yields very different periods identified as fiscal adjustment than any of the previously used criteria to identify fiscal adjustments.

5. Conclusion

Using annual data for 60 countries over 1980–2014, we study the drivers of fiscal adjustments, expansions, and their persistence over time. The identification of these fiscal events relies on breaks in their data generating process following Wiese et al. (2018). This approach is less ad hoc than commonly applied methods to identify fiscal adjustments and expansions and takes differences in volatility of budget processes across countries into account. In our sample, we identify 62 fiscal adjustments and 60 fiscal expansions. Most fiscal adjustments lasted between 2 and 4 years and the largest number of expansions is centered at a duration of 3 years.

Our findings suggest that a few political and institutional variables play an important role in determining the occurrence and duration of fiscal adjustments and expansions. Our findings for the occurrence of fiscal adjustments are broadly in line with the conclusions of Mierau et al. (2007) based on an analysis of OECD countries. More importantly, our results highlight the relevance of analyzing the likelihood of fiscal events together with the determinants of their persistence. Factors not affecting the occurrence of fiscal events may influence their duration once initiated. For instance, our results suggest that the strength of government has a negative effect on the probability of a fiscal expansion, while it has a positive effect on its duration. Our results also show that factors affecting the probability (duration) of a fiscal expansion are not the same as those driving the probability (duration) of a fiscal adjustment. For instance, we do not find that government strength is related to fiscal adjustments, while it affects fiscal expansions. In contrast to most previous studies, we also find that government ideology is important: the duration of fiscal adjustments and expansions is related to government ideology.

Finally, one caveat is in order. We have not examined whether the drivers of fiscal adjustments and expansions and their duration differ across country groups. As some of the drivers we analyze may differ systematically across country groups (this holds, for instance, for several institutional variables), a suggestion for future research is to analyze whether the drivers of fiscal adjustments and expansions and their duration are different for advanced and developing countries.

Declaration of competing interest

The authors whose names are listed immediately below certify that they have NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ejpoleco.2020.101911.

Appendix. Detailed estimation results

Table A.1
Determinants of fiscal adjustments. Conditional logit model

Variable/Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Debt-to-GDP ratio	**0.040****	0.005	0.005	**0.081****	**0.061***	**0.047****	**0.037***	**0.042****	**0.052*****	**0.040****	0.068	**0.041****	**0.040****
	(0.019)	(0.026)	(0.025)	(0.037)	(0.032)	(0.023)	(0.019)	(0.020)	(0.020)	(0.019)	(0.049)	(0.019)	(0.019)
(Lagged) Budget balance	**−0.518*****	**−0.615*****	**−0.615*****	**−0.678****	**−0.836****	**−0.510*****	**−0.527*****	**−0.517*****	**−0.540*****	**−0.497*****	**−0.817***	**−0.537*****	**−0.518*****
	(0.120)	(0.189)	(0.189)	(0.324)	(0.327)	(0.131)	(0.120)	(0.120)	(0.129)	(0.116)	(0.431)	(0.103)	(0.122)
Unemployment	0.032	0.027	0.028	−0.023	0.072	0.003	0.063	0.026	0.062	0.055	0.018	0.090	0.032
	(0.165)	(0.255)	(0.255)	(0.160)	(0.170)	(0.175)	(0.158)	(0.174)	(0.173)	(0.170)	(0.153)	(0.158)	(0.171)
Inflation	−0.165	−0.285	−0.282	**0.101****	**0.114****	−0.196	−0.154	−0.167	−0.112	−0.146	0.090	−0.141	−0.164
	(0.150)	(0.211)	(0.202)	(0.046)	(0.054)	(0.186)	(0.146)	(0.152)	(0.149)	(0.153)	(0.065)	(0.138)	(0.153)
GDP growth	−0.054	0.091	0.089	−0.031	−0.064	−0.042	−0.059	−0.055	−0.014	−0.051	−0.020	−0.067	−0.054
	(0.075)	(0.110)	(0.110)	(0.116)	(0.123)	(0.068)	(0.079)	(0.071)	(0.104)	(0.069)	(0.126)	(0.083)	(0.074)
NPA	**−1.928****	**−2.878****	**−2.872****	**−3.563*****	**−3.107***	**−2.262***	**−1.916****	**−1.965****	**−2.217*****	**−1.791****	−2.755	**−1.655****	**−1.924****
	(0.888)	(1.441)	(1.410)	(1.378)	(1.876)	(1.296)	(0.878)	(0.967)	(0.777)	(0.895)	(2.009)	(0.699)	(0.894)
TSLA	3.449	3.064	3.044	4.255	**4.701***	**3.210****	3.597	3.339	4.684	3.294	**2.435***	3.123	3.448
	(3.012)	(5.231)	(5.156)	(3.855)	(2.698)	(1.494)	(3.227)	(2.973)	(7.283)	(2.854)	(1.244)	(2.403)	(3.006)
Crisis		0.039											
		(0.632)											
Debt crisis			0.962										
			(9.777)										
Voice and accountability				−7.249									
				(7.280)									
Rule of law					**−8.702****								
					(4.154)								
Size fragmentation gov.						**−1.106***							
						(0.630)							
Political fragmentation gov.							0.833						
							(1.329)						
Strength of government								−1.247					
								(4.034)					
Government Ideology									−1.066				
									(0.660)				
Upcoming elections										0.310			
										(0.399)			
Broad policy reform											1.378		
											(1.621)		
Cabinet change												−0.979	
												(0.606)	
Government Crisis													−0.004
													(0.896)
Observations	510	384	384	217	217	483	510	510	510	481	218	503	509

Notes: Robust standard errors in parentheses. ***p < 0.01, **p < 0.05, *p < 0.1. NPA=Number of previous adjustments. TSLA = Time since last adjustment. Results based on countries with more than 14 observations. Conditional logit, binary dependent variable with 1 being equal to a fiscal adjustment. Numbers in this table represent the log-odds.

Table A.2
Determinants of fiscal expansions. Conditional logit Model

Variables/Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Debt-to-GDP ratio	−0.002			**−0.221***	−0.173	−0.007	−0.006	−0.003	0.000	−0.001	**−0.208*****	−0.001	−0.002
	(0.030)			(0.134)	(0.109)	(0.022)	(0.024)	(0.027)	(0.033)	(0.028)	(0.059)	(0.024)	(0.031)
(Lagged) Budget balance	**0.549*****			**0.924****	**1.058****	**0.870*****	**0.621*****	**0.570*****	**0.528*****	**0.597*****	**0.794*****	**0.695****	**0.544*****
	(0.191)			(0.467)	(0.519)	(0.312)	(0.237)	(0.209)	(0.193)	(0.224)	(0.137)	(0.296)	(0.190)
Unemployment	**−0.470***			−1.162	−1.332	−0.680	**−0.535****	−0.520**	**−0.475***	−0.522	**−0.872***	**−0.480****	**−0.470***
	(0.243)			(0.748)	(0.945)	(0.445)	(0.246)	(0.235)	(0.256)	(0.328)	(0.490)	(0.239)	(0.243)
Inflation	0.019			−0.619	−0.731	0.193	0.043	0.048	0.009	0.325	**−0.523*****	0.168	0.009
	(0.323)			(0.468)	(0.597)	(0.209)	(0.324)	(0.330)	(0.314)	(0.450)	(0.161)	(0.264)	(0.328)
GDP growth	−0.201			0.159	0.168	**−0.287****	−0.211	−0.176	−0.202	−0.168	**0.423****	−0.163	−0.187
	(0.169)			(0.194)	(0.183)	(0.143)	(0.169)	(0.178)	(0.167)	(0.206)	(0.179)	(0.150)	(0.170)
NPE	−2.830			−0.649	1.162	−2.693	−2.624	−2.188	−2.658	−3.963	0.961	−2.855	−2.844
	(2.987)			(1.971)	(2.354)	(2.327)	(2.539)	(2.824)	(2.953)	(3.366)	(1.154)	(2.820)	(2.964)
TSLE	0.416			4.517	4.739	**2.214****	0.854	0.283	0.465	0.517	1.037	1.034	0.528
	(1.376)			(3.186)	(3.462)	(0.974)	(1.481)	(1.517)	(1.516)	(1.434)	(0.659)	(1.303)	(1.382)
Crisis		**X**											
Debt crisis			**X**										
Voice and accountability				**−9.566*****									
				(3.503)									
Rule of law					**−12.931***								
					(7.830)								
Size fragmentation gov.						**−3.036***							
						(1.691)							
Political fragmentation gov.							**−3.285***						
							(1.785)						
Strength of government								**−7.943****					
								(3.586)					
Government Ideology									0.538				
									(0.538)				
Upcoming elections										−0.644			
										(0.461)			
Broad policy reform											**12.735*****		
											(4.597)		
Cabinet change												**1.079***	
												(0.609)	
Government Crisis													0.713
													(0.682)
Observations	483	–	–	295	295	459	471	471	483	451	301	477	483

Notes: Robust standard errors in parentheses. ***p < 0.01, **p < 0.05, *p < 0.1. NPE=Number of previous expansions. TSLE = Time since last expansion. Results based on countries with more than 14 observations. Conditional logit, binary dependent variable with 1 being equal to a fiscal expansion. Numbers in this table represent the log-odds.

Table A.3
Determinants of the hazard rate fiscal adjustments. Proportional hazards. All countries

Variables/ Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Debt-to-GDP ratio	−0.001	−0.001	−0.001	−0.001	−0.001	−0.001	−0.001	−0.000	−0.001	−0.001	−0.001	−0.001	−0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
(Lagged) Budget balance	**0.060*****	**0.063*****	**0.062*****	**0.051*****	**0.048*****	**0.062*****	**0.059*****	**0.061*****	**0.059*****	**0.063*****	**0.046*****	**0.061*****	**0.061*****
	(0.011)	(0.010)	(0.010)	(0.012)	(0.013)	(0.011)	(0.011)	(0.012)	(0.011)	(0.011)	(0.013)	(0.011)	(0.011)
Unemployment	**−0.032*****	**−0.036*****	**−0.035*****	**−0.044*****	**−0.044*****	**−0.028****	**−0.032*****	**−0.029*****	**−0.028*****	**−0.028*****	**−0.029*****	**−0.033*****	**−0.032*****
	(0.009)	(0.013)	(0.014)	(0.011)	(0.011)	(0.012)	(0.009)	(0.009)	(0.010)	(0.010)	(0.009)	(0.009)	(0.009)
Inflation	**0.012***	0.008	0.009	−0.009	−0.008	**0.010***	**0.012***	**0.015****	**0.015*****	**0.014****	−0.000	**0.013****	**0.011***
	(0.006)	(0.007)	(0.009)	(0.016)	(0.018)	(0.006)	(0.007)	(0.007)	(0.006)	(0.005)	(0.014)	(0.006)	(0.006)
GDP growth	−0.000	**−0.021**	**−0.024****	0.001	0.003	−0.005	−0.001	0.001	0.003	−0.002	0.007	0.000	0.001
	(0.012)	(0.010)	(0.011)	(0.016)	(0.015)	(0.011)	(0.012)	(0.012)	(0.012)	(0.011)	(0.015)	(0.012)	(0.012)
NPA	**−0.248*****	**−0.294*****	**−0.314*****	**−0.225***	**−0.219***	**−0.244*****	**−0.243*****	**−0.284*****	**−0.288*****	**−0.244*****	**−0.192****	**−0.241*****	**−0.253*****
	(0.083)	(0.098)	(0.103)	(0.125)	(0.127)	(0.084)	(0.084)	(0.108)	(0.096)	(0.080)	(0.085)	(0.083)	(0.085)
TSLA	**0.041*****	**0.027****	**0.027****	**0.043*****	**0.041*****	**0.040*****	**0.041*****	**0.039*****	**0.038*****	**0.039*****	**0.036*****	**0.041*****	**0.040*****
	(0.009)	(0.013)	(0.013)	(0.011)	(0.011)	(0.010)	(0.010)	(0.011)	(0.009)	(0.010)	(0.010)	(0.009)	(0.009)
Crisis		**0.115***											
		(0.068)											
Debt crisis			0.165										
			(0.504)										
Voice and accountability				**−0.237****									
				(0.096)									
Rule of law					**−0.159***								
					(0.092)								
Size fragmentation gov.						0.037							
						(0.042)							
Political fragmentation gov.							−0.055						
							(0.124)						
Strength of government								−0.391					
								(0.376)					
Government Ideology									**−0.087****				
									(0.040)				
Upcoming elections										**−0.065****			
										(0.031)			
Broad policy reform											−0.200		
											(0.163)		
Cabinet change												0.065	
												(0.043)	
Government Crisis													0.088
													(0.083)
ln_p	−0.006	0.047	0.062	0.093	0.074	−0.023	−0.006	0.053	0.041	−0.001	0.001	−0.014	−0.005
Observations	551	425	425	363	363	521	539	539	551	519	365	544	550

Notes: Robust standard errors in parentheses. ***p < 0.01, **p < 0.05, *p < 0.1. NPA=Number of previous adjustments. TSLA = Time since last adjustment. Results based on all countries with more than 14 observations. Proportional hazards method, assuming Weibull distribution. Dependent variable equal to the duration of fiscal adjustments. Model includes time-varying covariates.

Table A.4
Determinants of the hazard rate of fiscal expansions. Proportional hazards. All countries

Variables/ Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Debt-to-GDP ratio	−0.000	0.001	0.001	−0.000	−0.000	−0.000	−0.000	0.000	−0.000	0.000	−0.000	−0.000	−0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)
(Lagged) Budget balance	**−0.031*****	**−0.037*****	**−0.033*****	**−0.043*****	**−0.043*****	**−0.034*****	**−0.034*****	**−0.032*****	**−0.033*****	**−0.032*****	**−0.042*****	**−0.031*****	**−0.032*****
	(0.008)	(0.008)	(0.008)	(0.013)	(0.013)	(0.008)	(0.007)	(0.008)	(0.007)	(0.008)	(0.012)	(0.008)	(0.008)
Unemployment	0.001	**−0.009***	**−0.010***	0.004	0.003	−0.003	0.002	0.006	0.005	−0.001	−0.001	0.001	0.001
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	(0.005)	(0.005)	(0.005)
Inflation	**−0.022*****	−0.010	**−0.016****	**−0.032****	**−0.034****	**−0.020****	**−0.022*****	**−0.016****	**−0.014***	**−0.020*****	**−0.024****	**−0.023*****	**−0.022*****
	(0.008)	(0.008)	(0.008)	(0.014)	(0.014)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.012)	(0.008)	(0.007)
GDP growth	−0.005	0.008	0.015	−0.007	−0.008	−0.003	−0.006	−0.003	−0.001	−0.003	−0.011	−0.006	−0.005
	(0.008)	(0.011)	(0.010)	(0.011)	(0.011)	(0.009)	(0.008)	(0.008)	(0.008)	(0.009)	(0.010)	(0.008)	(0.008)
NPE	**−0.212*****	**−0.305*****	**−0.302*****	**−0.175****	**−0.164****	**−0.273*****	**−0.219*****	**−0.223*****	**−0.273*****	**−0.247*****	**−0.221*****	**−0.226*****	**−0.214*****
	(0.058)	(0.086)	(0.083)	(0.073)	(0.066)	(0.064)	(0.060)	(0.059)	(0.065)	(0.061)	(0.071)	(0.060)	(0.057)
TSLE	**0.022*****	**0.022*****	**0.024*****	**0.029*****	**0.029*****	**0.021*****	**0.024*****	**0.023*****	**0.016*****	**0.022*****	**0.028*****	**0.021*****	**0.022*****
	(0.005)	(0.006)	(0.006)	(0.007)	(0.007)	(0.006)	(0.005)	(0.005)	(0.005)	(0.006)	(0.007)	(0.005)	(0.005)
Crisis		**−0.155****											
		(0.062)											
Debt crisis			**0.311****										
			(0.143)										
Voice and accountability				−0.057									
				(0.090)									
Rule of law					−0.056								
					(0.051)								
Size fragmentation gov.						−0.000							
						(0.022)							
Political fragmentation gov.							0.019						
							(0.098)						
Strength of government								**−0.416****					
								(0.192)					
Government Ideology									**−0.112*****				
									(0.035)				
Upcoming elections										−0.042			
										(0.033)			
Broad policy reform											**0.642*****		
											(0.117)		
Cabinet change												−0.069	
												(0.046)	
Government Crisis													−0.095
													(0.099)
_p	**−0.073****	**−0.067***	**−0.083****	−0.092	**−0.091***	**−0.061***	**−0.083*****	−0.030	−0.002	**−0.068****	**−0.098*****	**−0.061****	**−0.071****
Observations	543	408	408	371	371	514	531	531	543	512	376	536	542

Notes: Robust standard errors in parentheses. ***p < 0.01, **p < 0.05, *p < 0.1. NPE=Number of previous expansions. TSLE = Time since last expansion. Results based on all countries with more than 14 observations. Proportional hazards method, assuming Weibull distribution. Dependent variable equal to the duration of fiscal expansions. Model includes time-varying covariates.

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